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DIALOG(R)File 351:Derwent WPI

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**Flameproofed polyacrylic prodn. - involves heat treating precursor fibre under pressure, useful for carbon fibre mfr.**

Patent Assignee: TORAY IND INC (TORA )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 3076822	A	19910402	JP 9061488	A	19900313	199119 B

Priority Applications (No Type Date): JP 89116602 A 19890509; JP 8967153 A 19890317; JP 9061488 A 19900313

Abstract (Basic): JP 3076822 A

Flame-proofed acrylic fibre is produced by heat-treating acrylic precursor fibre under pressurised conditions, pref. under a pressure of 0.05-100 kg/cm<sup>2</sup>-G.

USE/ADVANTAGE - The process is used for prepn. of flame-proofed acrylic fibre which is subsequently carbonised to obtain carbon fibre. By heat-treating under pressure, the flame-proofing time is shortened to 1/2 - 1/20 as compared with that required by conventional normal pressure processes.

In an example, acrylic copolymer (99.0 mol.% acrylonitrile + 1.0 mol.% methacrylic acid) was dissolved in DMSO to prepare 20 wt.% soln. From the soln., undrawn filaments were prepd. by dry-wet spinning process using 30 wt.% cold (2 deg.C) aq. DMSO soln. as the coagulating bath. After washing with water, the filaments were drawn to 4 times of the original length. The filaments were then lubricated with silicone-based oil, and tightened by contact with drying roll heated at 130-160 deg.C. The dried and tightened filaments were further drawn in 4.0 kg/cm<sup>2</sup> steam (draw ratio 3.0) to obtain 2100 d/3000 f tow. The tow was heated in 10 kg/cm<sup>2</sup>-G air at 240-260 deg.C for 10 minutes, maintaining the draw ratio at 1.0, to obtain flame-proofed precursor fibre (density 1.35 g/cm<sup>3</sup>, tensile strength 3.8 g/d). (4pp Dwg.No.0/0)

Title Terms: FLAME; POLYACRYLIC; PRODUCE; HEAT; TREAT; PRECURSOR; FIBRE; PRESSURE; USEFUL; CARBON; FIBRE; MANUFACTURE

Derwent Class: A14; A35; E36; F01; L02

International Patent Class (Additional): D01F-006/18; D01F-009/22

File Segment: CPI

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